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Memorandum by Dr. Buchanan on the Relation of Present
Epidemic Small-pox in the Orsett Union to the M. A. B.
Small-pox Hospital Ships at Long Reach.

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The ability of small-pox to spread from hospitals receiving acute cases of the disease, independently of personal communication and of lines of traffic to and from the hospital, has long received close and careful attention from the Board. Their present Medical Officer demonstrated the spread of small-pox in this way around the Metropolitan Asylums Board Fulham Hospital in 1881, and again in 1884, and subsequently, as a result of comprehensive study of the local distribution of small-pox mortality in London, he has afforded further evidence of the danger which the Metropolitan Asylums Board London Hospitals receiving acute small-pox cases used formerly to cause to unprotected persons dwelling in their vicinity. It was in consequence of this demonstration of the repeated spread of small-pox from hospitals in London that the Metropolitan Asylums Board adopted the policy of removing all cases of this disease out of populous areas down to their Hospital Ships in Long Reach, which were taken into use in 1884. And for many years the Board, as is well known, have refused, often in the face of local opposition, to sanction a loan for the erection of any hospital in England or Wales intended for the reception of acute small-pox cases, unless the building be placed in a sparsely populated area, and the population within half a mile of the hospital does not exceed 500 to 600.

Save for the training ship "Cornwall," to which reference is made below, the Metropolitan Asylums Board Hospitals Ships in Long Reach have practically speaking no population dwelling within half a mile. Between half a mile and one mile there is but one collection of dwellings, namely, some 110 houses at Purfleet, in the Orsett Union, on the Essex side of the river. Between one and two miles from the ships there are, on the Essex side, only a few dwellings comprised in the parish of West Thurrock. Just beyond the two mile circle comes the village of West Thurrock, beyond which again are the more populous parts of the Orsett Union, including the Urban District of Grays, which is more than three miles from the ships.

During the present epidemic of small-pox in the Orsett Union, the incidence of the disease has been disproportionately heavy in the village of Purfleet and in West Thurrock parish; moreover, the earliest cases of small-pox occurred among persons either dwelling in Purfleet, or associated with Purfleet by reason of their occupation. The proposition that infection was introduced into the Orsett Union at Purfleet by aerial convection from the ships over half a mile away, and that during the epidemic air-borne infection from the ships has from time to time been responsible for further cases in Purfleet, possibly also for cases dwelling as far off as the village of West Thurrock, more than two miles away, is incapable of proof, but is one which, in view of the knowledge which the Board has acquired from study of previous epidemics, it is impossible to dismiss as unlikely.

The possibility, or the probability, of this occurrence, however, may be admitted without conceding that the magnitude of the epidemic in the Orsett Union is, save in a remote sense, to be attributed to the influence of the hospital ships. The extensive prevalence of small-pox which has occurred in Grays Urban District, in the village of Orsett, in Tilbury, and in other parts of the Union some miles away from the ships, is rather to be referred, for example, to spread of the disease within households, or from person to person, or by unrecognised cases of small-pox; in other words, to causes which (as now in London) operate to maintain or multiply small-pox under circumstances in no way peculiar to the Orsett Union. And there can be no doubt that such agencies have also played a not inconsiderable part in portions of the Union which may be regarded as possibly or probably exposed to opportunities of air-borne infection from the ships, for instance, Purfleet and West Thurrock.

It may here be observed that the Orsett Union suffered severely from small-pox during the general pandemic of 1871, long before any London small-pox was placed on its borders. Moreover, records show that vaccination of infants has for several years been largely neglected in this Union, while here, as elsewhere, revaccination has seldom been resorted to in the absence of grave apprehension of small-pox. Hence the population of Orsett is one in which small-pox, if introduced, would have many opportunities of reaching epidemic proportions in ways with which we are familiar in places where no questions of infection from hospitals have arisen.

That small-pox infection, by whatever agency it is present, is a danger only to persons unprotected, or incompletely protected, against attack by small-pox, is of course a truism. The training ship "Cornwall," with a population of some 250, lies in Long Reach, within half a mile of the hospital ships; nearer to them, that is, than the village of Purfleet. The possibility of infection from the ships has long been realised by the authorities of the "Cornwall," and protection of the occupants by vaccination and revaccination has been systematically practised. No case of small-pox has occurred on the "Cornwall" during the present epidemic. When last year cases of London small-pox began to be admitted in increasing numbers to the ships, however, the inhabitants of Purfleet were far from being in the same position as those of the "Cornwall" in respect of immunity against small-pox. Many were unvaccinated, and had not previously had small-pox, while others were adults who had not renewed by revaccination the protection which they had obtained in infancy. And when small-pox first made its appearance in Purfleet, at the beginning of October, 1901, there was a regrettable delay on the part of the vaccination authority, the Orsett Guardians, in taking action to afford special facilities to the inhabitants to obtain the protection of revaccination. It was not until the end of November that active steps were taken to urge vaccination or revaccination upon all the inhabitants of Purfleet. In the case of the village of West Thurrock, and its neighbourhood, delay in affording special facilities for vaccination and revaccination was even greater. In this neighbourhood, moreover, many inhabitants, including a prominent Guardian and local employer of labour, for many years had identified themselves with an antivaccination movement, and this part of the Union furnished a large proportion of children whose parents had declined or neglected to obtain vaccination for them. Hence, though small-pox was, as it were, at their doors, the people had much reluctance in resorting to vaccination, either for their children or for themselves.

It appears, however, as a result of inquiries made in February, that by that month nearly all the inhabitants of Purfleet had become protected against small-pox, either as a result of recent vaccination or revaccination, or because they had already been attacked by small-pox during the epidemic. Much progress in the same direction has been made in the neighbourhood of West Thurrock village. Since January special attention has been given to this area by the vaccination officials of the Guardians, and vaccination has come to be accepted by many who formerly objected.

In these circumstances, it would seem that if the ships are now as a matter of fact occasioning aerial dissemination of small-pox within a mile, or even as far as two miles, comparatively little harm is likely to result. It is needless to dwell upon the insuperable difficulties which would attend any attempt during this epidemic to provide elsewhere the accommodation for London acute small-pox cases which at present is made at the ships in Long Reach and the large establishment which adjoins them on shore. But it may be said with some degree of confidence that their removal at the present time, if it were possible, would have little, if any, effect in diminishing prevalent small-pox in the Orsett Union.

G. S. BUCHANAN.

March 19th, 1902.

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